

PROJECT DESCRIPTION

I. GENERAL

This project involves the installation of a new traffic control signal at the intersection of MD 140 and the entrances to Home Depot/Garrison Forest School in Baltimore County, Maryland. MD 140 is considered to run in a north/south direction.

II. INTERSECTION OPERATION

The intersection is to operate in NEMA six (6) phase, full-traffic-actuated mode. There will be an exclusive/permissive left turn phase for both the north and southbound movements of MD 140. The MD 140 through movements will operate concurrently. The Home Depot/Garrison Forest School Entrances will operate as a side street split operation with an actuated pedestrian movement across the north leg of the intersection.

An eight phase, full-traffic-actuated, solid state digital controller with intersection monitor and harness, battery back-up, and 3 four-channel rack mounted time delay output loop detector amplifiers housed in a base mounted cabinet are to be installed at this location.

III. INTERCONNECTION

The existing interconnect cable between the intersections of MD 140 @ St. Thomas S.C. and MD 140 @ Greenspring Valley Road is to be re-routed to run between the intersections of MD 140 @ Home Depot/Garrison Forest Entrances and MD 140 @ Greenspring Valley Road. A new 12-pair interconnect cable will be installed between the intersections of MD 140 @ Home Depot/Garrison Forest Entrances and MD 140 @ St. Thomas S.C..

EQUIPMENT LIST

A. Approved S.H.A. equipment to be purchased by the Developer and installed by the Contractor. All equipment in this list shall have catalog cuts submitted for approval prior to installation.

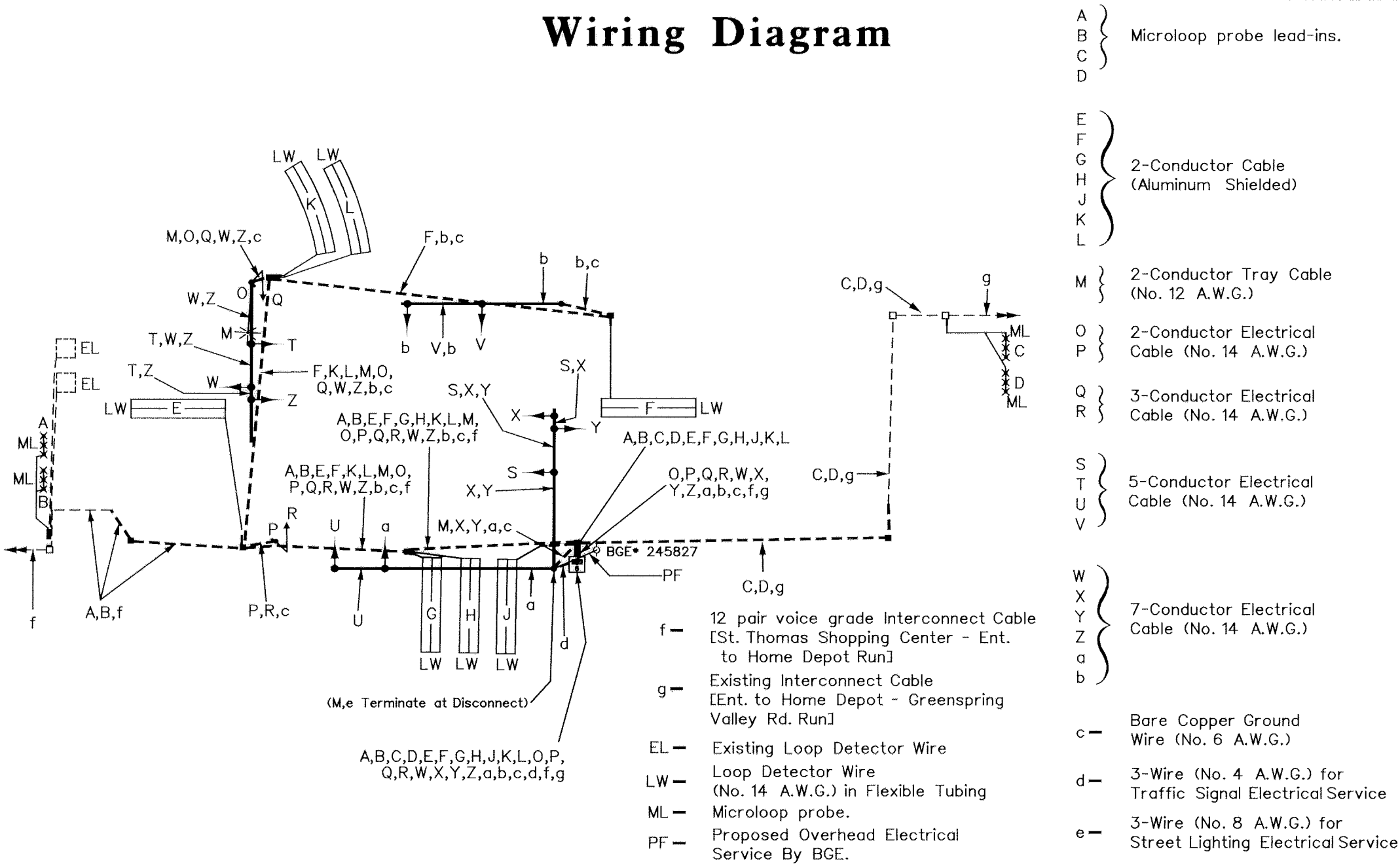
B. Equipment to be furnished and installed by the Contractor. All equipment in this list shall have catalog cuts submitted for approval prior to installation.

Quantity	Units	Specification Section	Description	Quantity	Units	Specification Section	Description
2	EA	818	27 ft. steel mast arm pole with 50 ft. mast arm [Note: four 1-3/4 in. x 90 in. anchor bolts].	Lump Sum	LS	108	Mobilization.
1	EA	818	27 ft. steel twin mast arm pole with 50 ft. and 70 ft. mast arms [Note: four 2 in. x 90 in. anchor bolts].	Lump Sum	LS	104	Maintenance of traffic.
1	EA	818	10 ft. steel pedestal pole with break away transformer base [Note: four 1 in. x 40 in. anchor bolts].	5	CY	205	Test pit excavation.
1	EA	818	10 ft. steel pedestal pole with break away transformer base [Note: four 1 in. x 40 in. anchor bolts].	7	EA	811	Handhole.
1	EA	816	Standard S.H.A. traffic signal controller, base mounted cabinet, and 3 four-channel rack mounted time delay output loop detector amplifiers [Note: Controller and cabinet shall be supplied by Econolite and delivered to the S.H.A. signal shop for wiring and testing. Contact Mr. Ed Rodenhizer (410) 787-7650].	1000	LF	815	Sawcut for signal loop detector.
4	EA	814	12 in., one-way, three section (R,Y,G) adjustable traffic signal head with mast arm mounting hardware and tunnel visors.	3260	LF	810	Loop detector wire (No. 14 A.W.G.) encased in flexible tubing.
2	EA	814	12 in., one-way, four section (R,Y,G,GA) adjustable traffic signal head with mast arm mounting hardware and tunnel visors.	1090	LF	810	2-conductor (aluminum shielded) electrical cable (No. 14 A.W.G.).
2	EA	814	12 in., one-way, five section (R,Y,YA,G,GA) adjustable traffic signal head with mast arm mounting hardware and tunnel visors.	280	LF	810	2-conductor electrical tray cable (No. 12 A.W.G.).
2	EA	814	12 in., one-way, five section (R,Y,YA,G,GA) adjustable traffic signal head with mast arm mounting hardware and tunnel visors.	400	LF	810	2-conductor electrical cable [No. 14 A.W.G.]
2	EA	814	12 in., one-way, five section (R,Y,YA,G,GA) adjustable traffic signal head with mast arm mounting hardware and tunnel visors.	400	LF	810	3- conductor electrical cable [No. 14 A.W.G.]
2	EA	814	12 in., one-way, five section (R,Y,YA,G,GA) adjustable traffic signal head with mast arm mounting hardware and tunnel visors.	110	LF	810	5-conductor electrical cable (No. 14 A.W.G.).
2	EA	814	12 in., one-way, five section (R,Y,YA,G,GA) adjustable traffic signal head with mast arm mounting hardware and tunnel visors.	1500	LF	810	7-conductor electrical cable (No. 14 A.W.G.).
2	EA	814	12 in., one-way, five section (R,Y,YA,G,GA) adjustable traffic signal head with mast arm mounting hardware and tunnel visors.	50	LF	810	3-wire (No. 4 A.W.G.) electrical cable.
2	EA	814	12 in., one-way, five section (R,Y,YA,G,GA) adjustable traffic signal head with mast arm mounting hardware and tunnel visors.	25	LF	810	3-wire (No. 8 A.W.G.) electrical cable.
1	EA	814	12 in., one-way, two section (symbolic DW, WK) adjustable pedestrian signal head with pole top mounting hardware and cut away visors.	385	LF	804	Bare copper stranded ground wire (No. 6 A.W.G.).
1	EA	814	12 in., one-way, two section (symbolic DW, WK) adjustable pedestrian signal head with pole mounting hardware and cut away visors.	65	LF	805	1 in. liquid tight flexible non-metallic conduit for loop detector sleeve.
1	EA	814	12 in., one-way, two section (symbolic DW, WK) adjustable pedestrian signal head with pole mounting hardware and cut away visors.	40	LF	805	2 in. polyvinyl chloride [Schedule 40] electrical conduit - trenched.
1	EA	814	12 in., one-way, two section (symbolic DW, WK) adjustable pedestrian signal head with pole mounting hardware and cut away visors.	130	LF	805	2 in. polyvinyl chloride [Schedule 80] electrical conduit - trenched.
4	EA	810	Microloop probes (set of 3) with 500 ft. lead-in cable.	20	LF	805	2 in. polyvinyl chloride [Schedule 80] electrical conduit - slotted in roadway.
21	SF	813	36 in. x 42 in. R 10-12 sign with mast arm mounting hardware.	225	LF	805	3 in. polyvinyl chloride [Schedule 40] electrical conduit - trenched.
44.5	SF	813	48 in. x 48 in. W 3-3 "NEW" sign for ground mounting.	805	LF	805	3 in. polyvinyl chloride [Schedule 80] electrical conduit - pushed.
7.5	SF	813	30 in. X 36 in. R 3-5(L) sign with mast arm mounting hardware.	805	LF	805	3 in. polyvinyl chloride [Schedule 80] electrical conduit - slotted in roadway.
7.5	SF	813	30 in. x 36 in. R 3-6(L) sign with mast arm mounting hardware.	4	LF	805	4 in. polyvinyl chloride [Schedule 40] electrical conduit - trenched.
7.5	SF	813	30 in. x 36 in. R 3-5(R) sign with mast arm mounting hardware.	801	CY	801	Concrete foundation for traffic signal equipment.
1.5	SF	813	12 in. x 9 in R 10-3c pedestrian pushbutton sign with pole mounting hardware.	5	EA	804	Ground rod - 3/4 in. diameter x 10 ft. length.
2	EA	817	Pedestrian pushbutton assembly.	1	EA	807	Control and distribution equipment (120/240 V, one phase, three wire system) for a type B-4 overhead electrical service.
1	EA	806	15 ft. luminaire arm.	350	LF	556	12 in. wide HAPPTPM pavement marking - white for cross walk.
1	EA	806	250 W H.P.S. lamp and luminaire.	150	LF	556	24 in. wide HAPPTPM pavement marking - white for stop line.
				82	LF	812	4 in. x 4 in. wood sign support.
				650	LF	810	12 pair voice grade telemetry interconnect cable (No. 19 A.W.G.) jelly filled.
				1	EA	---	Cut, clean, and cap mast arm pole.
				Lump Sum	LS	---	Relocate existing underground interconnect cable.
				Lump Sum	LS	---	Remove existing traffic signal equipment.
				Lump Sum	LS	---	As-built for S.H.A. (on CADD).

Phase Chart

	1	2	3	4	5	6	7	8	9	10	11-12	
Phase 1 & 5	←G	←G	R	←G	←G	R	R	R	R	R	DW	↗
1 & 5 Change to Phase 1 & 6 or Phase 2 & 5												↘
Phase 1 & 6	←G	←G	G	R	R	R	R	R	R	R	DW	↖
1 Change	←G	←G	G	R	R	R	R	R	R	R	DW	↖
Phase 2 & 5	R	R	R	←G	←G	G	R	R	R	R	DW	↗
5 Change	R	R	R	←G	←G	G	R	R	R	R	DW	↗
Phase 2 & 6	G	G	G	G	G	G	R	R	R	R	DW	↖
2 & 6 Change	Y	Y	Y	Y	Y	Y	R	R	R	R	DW	↗
Phase 3	R	R	R	R	R	R	R	R	←G	G	DW	↓
3 Change	R	R	R	R	R	R	R	R	←G	G	DW	↓
Phase Alt 3	R	R	R	R	R	R	R	R	←G	G	WK	↕
Ped Clearance	R	R	R	R	R	R	R	R	←G	G	FL/DW	↕
Alt 3 Change	R	R	R	R	R	R	R	R	←G	G	Y	↕
Phase 4	R	R	R	R	R	R	←G	G	R	R	DW	↑
4 Change	R	R	R	R	R	R	←G	G	R	R	DW	↑
Flashing Operation	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/R	FL/R	FL/R	FL/R	DARK	⬆⬆⬆⬆

Wiring Diagram



MDOT - STATE HIGHWAY ADMINISTRATION
Office of Traffic & Safety
TRAFFIC ENGINEERING DESIGN DIVISION

DRAWN BY: <u>Frank Hoeckel</u>	(General Information)		
DES. BY: <u>Frank Hoeckel</u>	MD 140 at Entrance to Home Depot/ Garrison Forest School Entrance		
CHK. BY: _____	COUNTY: BALTIMORE	LOG MILE * 03014004.58	
DATE: <u>October 27, 1997</u>	F.A.P. NO. <u>N/A</u>	TS/STD. NO.	SHEET NO.
SCALE: <u>N/A</u>	S.H.A. NO. _____	3669-GI	2 of 3



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